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(दूसरा पुनरीक्षण)

Indian Standard

DIRECTION OF OPERATION OF CONTROLS FOR MACHINE TOOLS — RECOMMENDATIONS

(Second Revision)

UDC 621·9·06-5

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 1992 **Price Group 1**

Machine Tool Basics and Modular Units Sectional Committee, PE 03

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 447 : 1984 'Machine tools — Direction of operation of controls' issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Machine Tool Basics and Modular Units Sectional Committee and approval of the Production Engineering Division Council.

This standard was first issued in 1965 by endorsement of the draft ISO Recommendation No. 624 'Direction of operation of machine tools controls'. Consequent upon publication of ISO 447 : 1973, this standard was first revised by adopting ISO 447 : 1973 to bring it in line with ISO Standard.

After the revision of ISO 447 : 1973, this second revision has been taken up by adopting ISO 447 : 1984 to bring it in line with ISO Standard. While revising, Fig. 4 has been modified.

The text of the ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

> Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

Indian Standard
DIRECTION OF OPERATION OF CONTROLS FOR MACHINE TOOLS — RECOMMENDATIONS
(Second Revision)

1 Scope and field of application

This International Standard establishes rules for the direction of operation of controls whose function is to produce movement of controlled machine tool components in one or other of two opposing directions.

Its scope does not include controls for components which rotate continuously in the same direction during the normal functioning of the machine (such as controls for electric motors).

2 General rules

If, for special reasons, the following rules cannot be applied, then the directions of operation of the control and the corresponding directions of movement of the controlled component shall be as shown on the machine indicator plate.

2.1 Lever control

The lever shall be so placed that

- for the control of a rectilinear movement, the line joining the extreme positions of the handle, on either side of the neutral position, is approximately parallel to the direction of the movement of the controlled component;
- for the control of a circular movement, the plane in which the lever arm rotates is parallel to that of the controlled component.

In either case, the movement of the lever shall produce a movement of the controlled component in the same direction

This rule is valid for the control of movements produced manually (figure 1), as well as for starting automatic movements (figures 2 and 3).

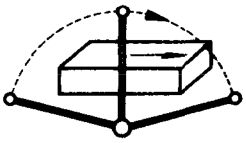

Figure 1

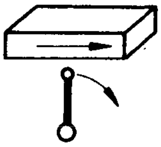

Figure 2

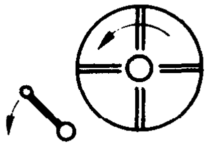

Figure 3

2.2 Push-button control

2.2.1 Fixed control

The line of push buttons shall be placed parallel to the movement of the controlled component and the operation of the right-hand button, or the furthest button or the top button, shall produce a movement to the right, or away, or upwards respectively (for an operator placed in the operating position).

This rule is applicable for the control of a component with a rectilinear movement (figure 4) as well as for the control of a component with a circular movement, but considering only, in the latter case, the general direction of movement of the peripheral part of the controlled component which is the nearest to the line of push buttons (figure 5).

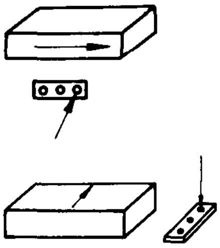

Figure 4

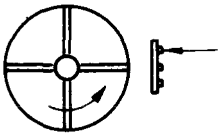

Figure 5

2.2.2 **Movable control** (for example, pendent control)

The terms of paragraph 2.2.1 remain valid but it is necessary to show on a movable control, which can rotate more than 180°, an outline of the machine in order to prevent ambiguity in the directions of motion.

2.3 Wheel control

The clockwise rotation of the wheel (for an operator facing the shaft end on which the wheel is mounted) shall produce, for the controlled component,

- a rectilinear movement to the right, or away, or upwards (for an observer looking in a direction parallel to that of an operator in the operating position, if the wheel axis is vertical, or facing the shaft end of the wheel, if it is horizontal);

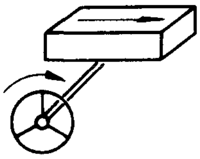

Figure 6

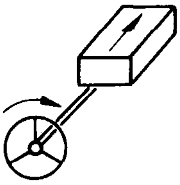

Figure 7

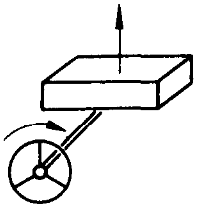

Figure 8

- or a clockwise rotation (for an observer facing the spindle or the shaft end on which the controlled component is mounted);

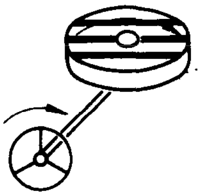

Figure 9

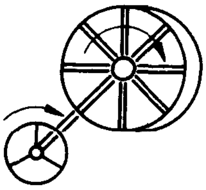

Figure 10

- or a movement towards the centre (clamping of chucks).

3 Special cases

3.1 If the direction (vertically up or down, horizontally to right or left, horizontally away or towards) of the movement of the controlled component can be varied by a preselector device independent of the control under consideration, the above rules apply to that one of the directions which is most frequently used.

3.2 If the same lever is used for starting both the cutting movement and the feed movement of the tool, the above rules apply to the feed movement.

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